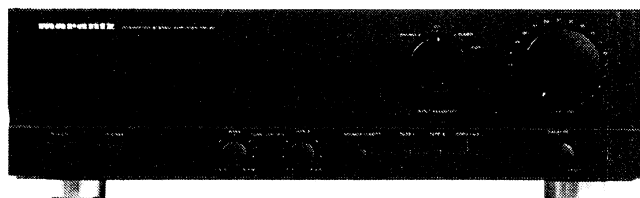


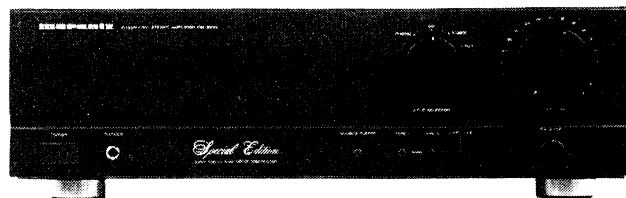
# Service Manual

**74 PM30/01B/02B/05B/07B  
10B/12B/15B/17B**

**Stereo amplifier**



**PM-30**



**PM-30SE**

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## **model PM-30/PM-30SE**

First issue: 1990

4822 725 50912

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Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.

Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

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1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

### PARTS ORDERING

Parts may be ordered at the following addresses:

**AUSTRIA**  
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Vertriebsgesellschaft GmbH  
Wienbergstrasse 1  
A 1101 Wien  
Austria  
Telex: 132.332

**BELGIUM**  
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1720 Groot-Bijgaarden  
Belgium  
Telex: 24466

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Casilla 2687  
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Postbox 1919  
DK-2300 København S  
Denmark  
Telex: 31201

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DIVISION OF OY PHILIPS AB  
Kavokatu 8  
00100 Helsinki  
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Telex: 124811

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4 Rue Bernard Palissy  
92600 Asnières  
France  
Telex: 611651

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2000 Hamburg  
Germany

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Elpro Marantz  
Wint Houtlaan 28  
3526 KV Utrecht  
The Netherlands  
Telex: 4748

**NORWAY**  
MARANTZ  
DIVISION OF PHILIPS A/S  
Sandstuveien 40  
0680 Oslo 6  
Norway  
Telex: 72640

**GREAT BRITAIN**  
MARANTZ AUDIO U.K. Ltd  
Unit 15/16  
Saxon Way Industrial Estate  
Moor Lane  
Harmondsworth UB7 0LW  
Great Britain  
Telex: 935196

**GREECE**  
SHERTON ELECTRONICS S.A.  
P.O.Box 21025  
Hippocratus Street 188  
Athens 11471  
Greece  
Telex: 216.795

**JAPAN**  
MARANTZ JAPAN, Inc.  
35-1, 7-chome, Sagamiono  
Sagamihara-shi, Kanagawa  
Japan

**KUWAIT**  
AL ALAMIAH ELECTRONICS  
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Fahd al Saleem Street  
P.O.Box 23781  
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20126 Milano  
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University Street  
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Telex: 401530

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DIVISION OF PHILIPS S.A.  
Main Road Martindale  
P.O. Box. 58088  
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**SPAIN**  
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Ignacio Iglesias 10  
Badalona (Barcelona)  
Spain  
Telex: 59355

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DIVISION OF PHILIPS  
Försäljning AB  
Tegeluddsvägen 1  
S-115 84 Stockholm  
Sweden  
Telex: 14060

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Duenstrasse 3  
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Telex: 1682

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Outeira-carnaxide  
2795 LinDA-A-VELHA  
Telex: 43906

## TECHNICAL SPECIFICATIONS (DIN)

### Power Amplifier Section

IHF Dynamic Power : 65W  
2 ohms : 60W  
4 ohms : 42W  
8 ohms

Power Output Per Channel : 38W  
DIN 8 ohms 1 kHz 1% THD : 40W  
FTC 4 ohms 40-20 kHz 0.06% THD : 35W  
FTC 8 ohms 40-20 kHz 0.03% THD

Total Harmonic Distortion at 8 ohms : 0.015%  
I.M. Distortion at 8 ohms : 0.015%  
Damping Factor : 100

### Phono Amplifier Section

MM Cartridge Input : ±0.5 dB  
Frequency Difference : 2.5 mV  
Input Sensitivity : 47k Ohms  
Input Impedance

### High Level Section

Frequency Response : 10-60 kHz  
Signal to Noise Ratio (A weighted) : 87 dB  
Input Sensitivity : 150 mV  
Input Impedance : 33k Ohms  
Tape Output Level [Phono (MM) 5 mV 1 kHz Input] : 300 mV  
Tape Output Impedance (Phono) : 220 Ohms  
Tone Control Action 100 Hz : ±6 dB  
10 kHz : ±6 dB

### General

Power Requirements : 220V/240V  
2 Voltage version : 110V-240V  
4 Voltage version

Power Consumption (Rated Power) : 135W  
AB Class Moode : —  
A Class Moode

### Dimensions

Panel Width : 420 mm  
Panel Height : 118 mm  
Depth : 280 mm

### Weight

Unit alone : 10 kg

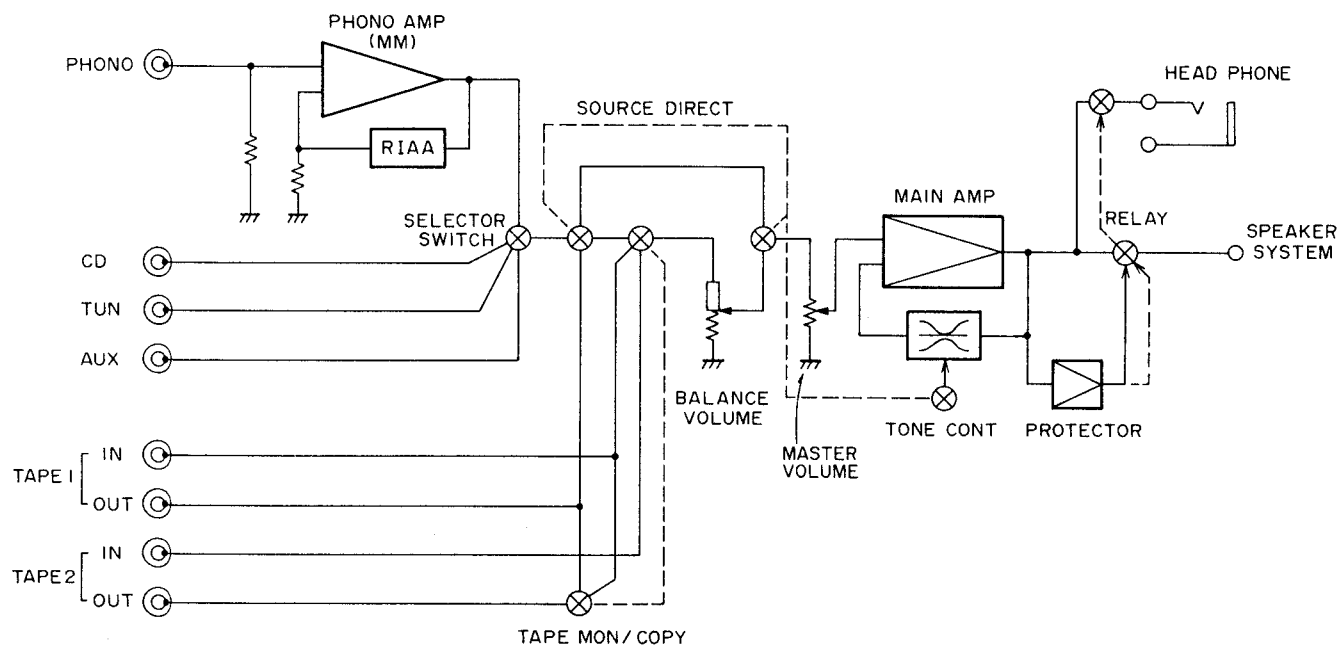
Specifications and appearance are subject to change for modification without notice.

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

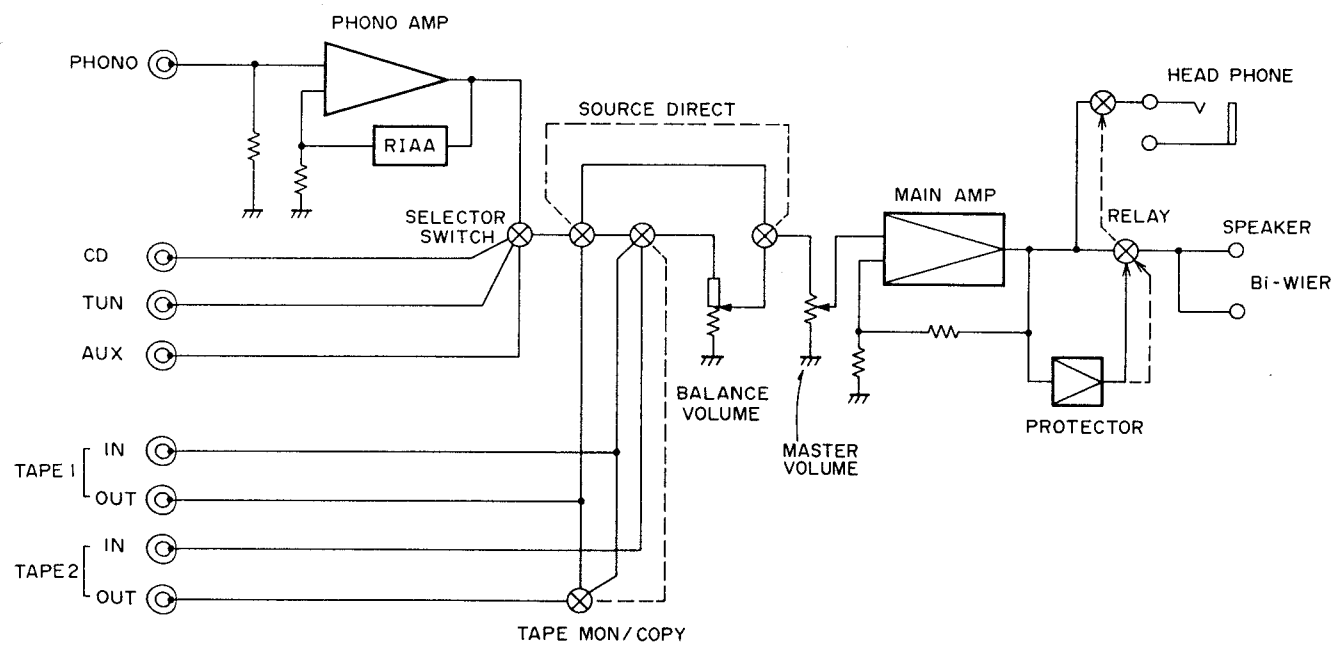
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1. BLOCK DIAGRAM

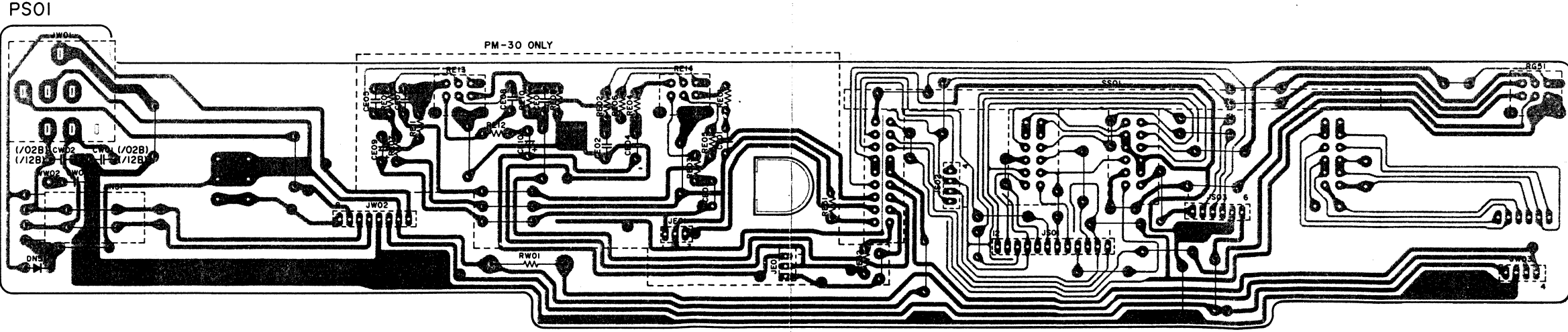
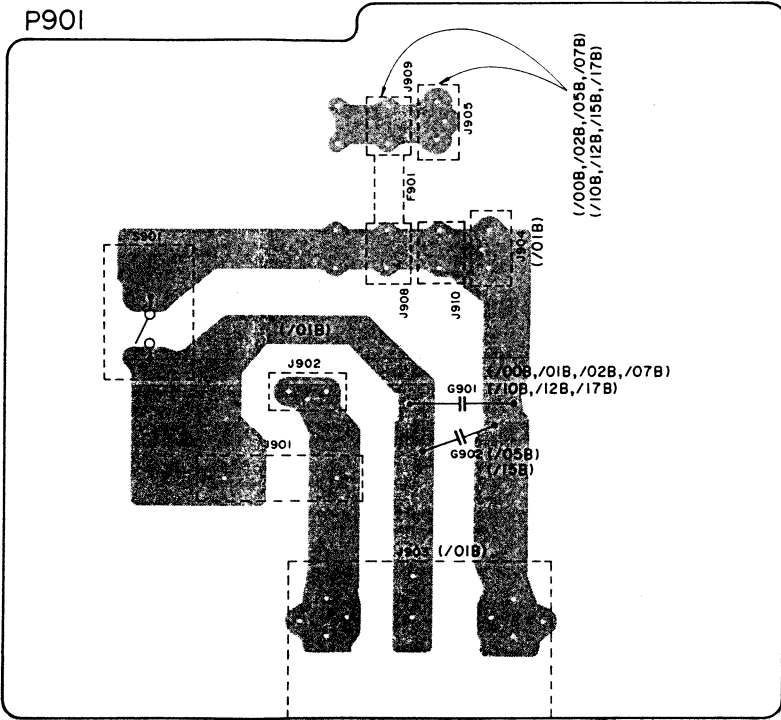
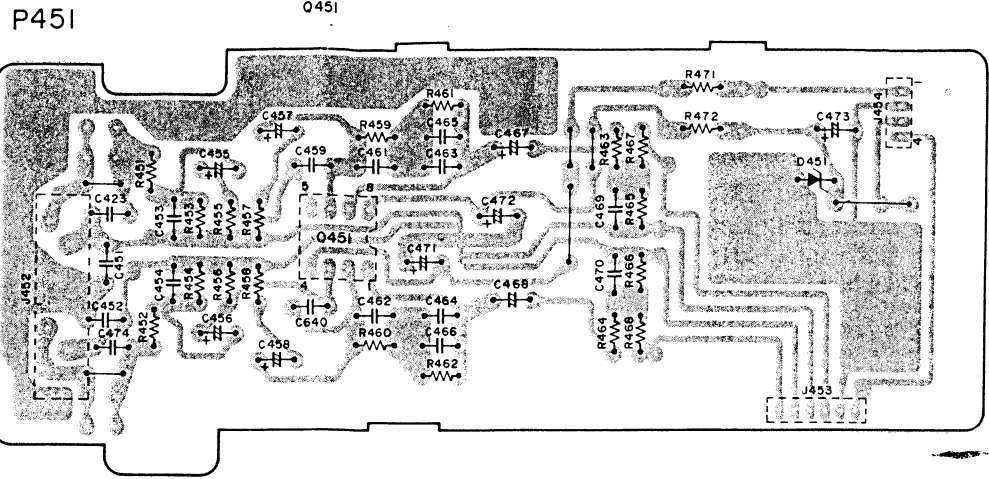
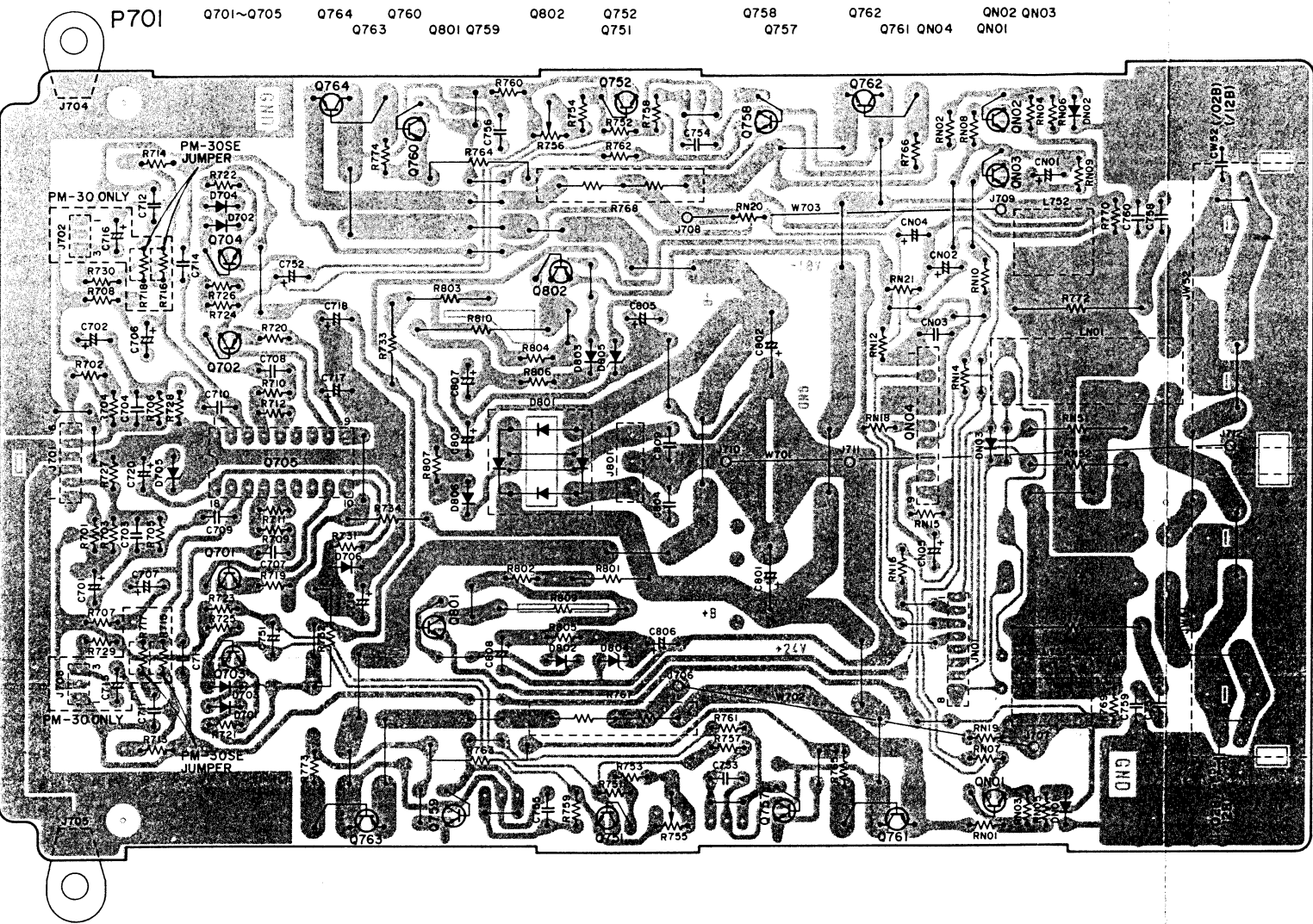
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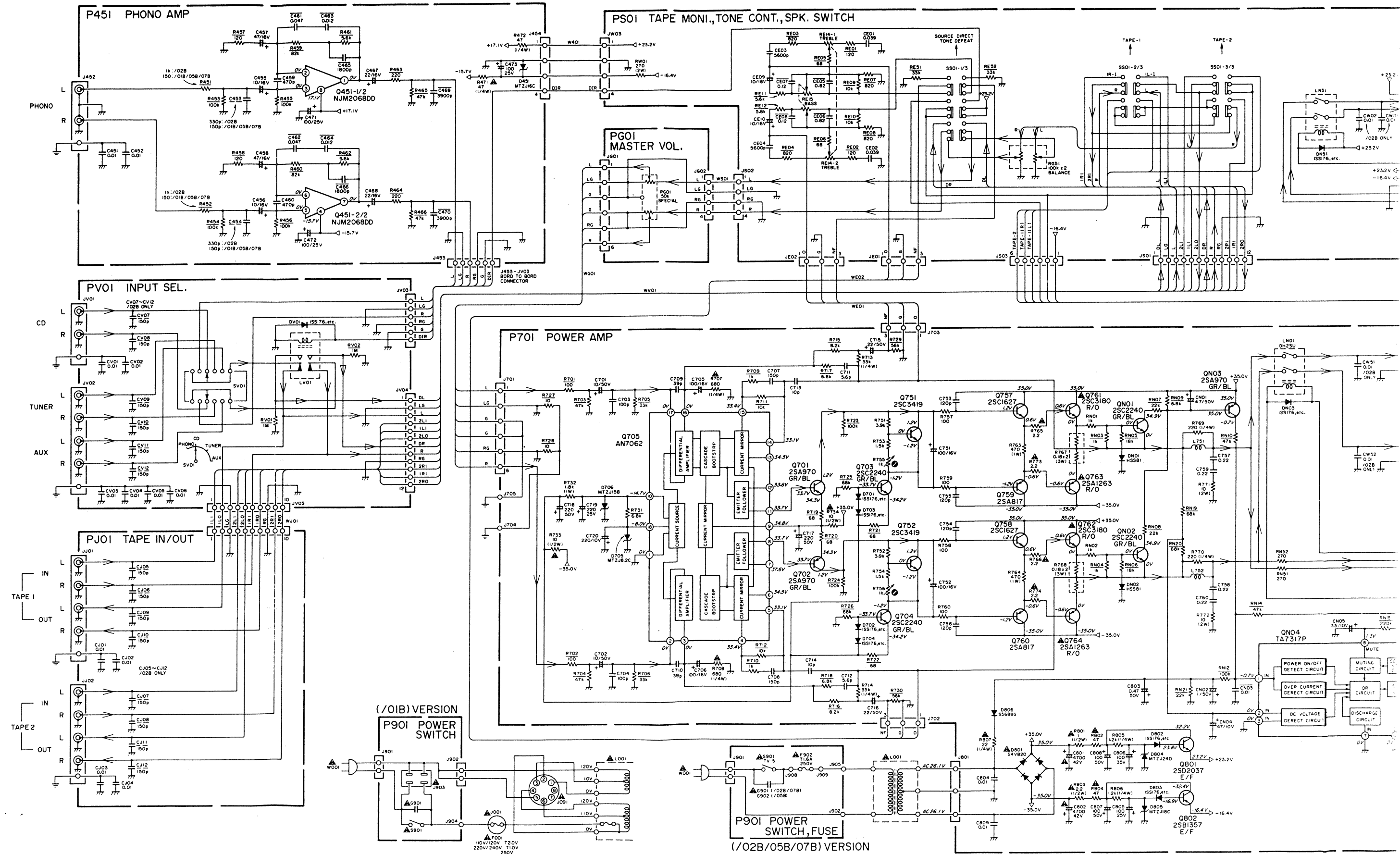
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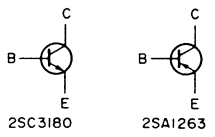
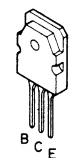
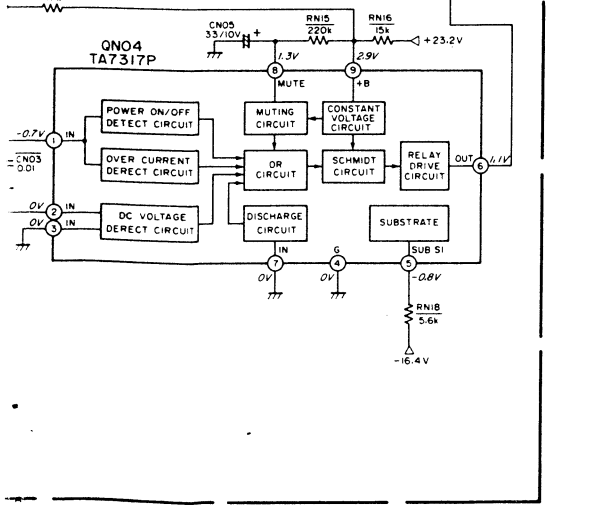
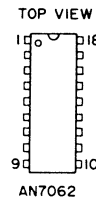
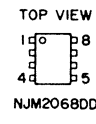
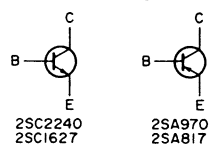
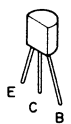
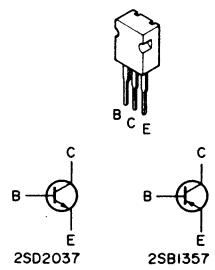
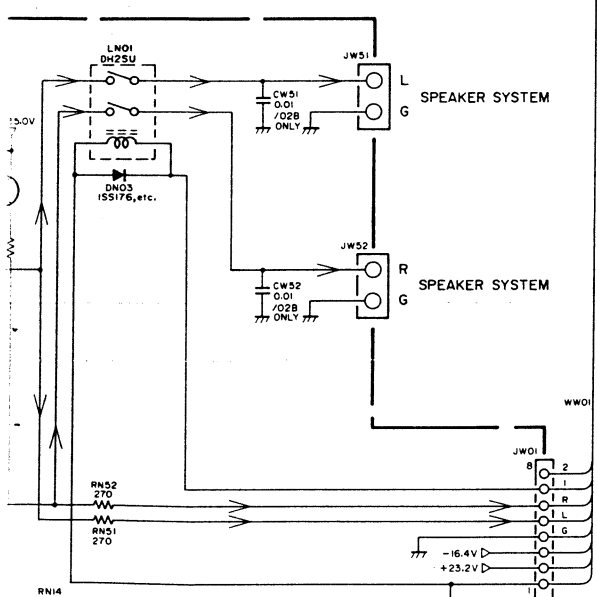
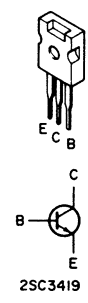
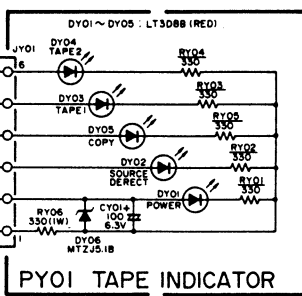
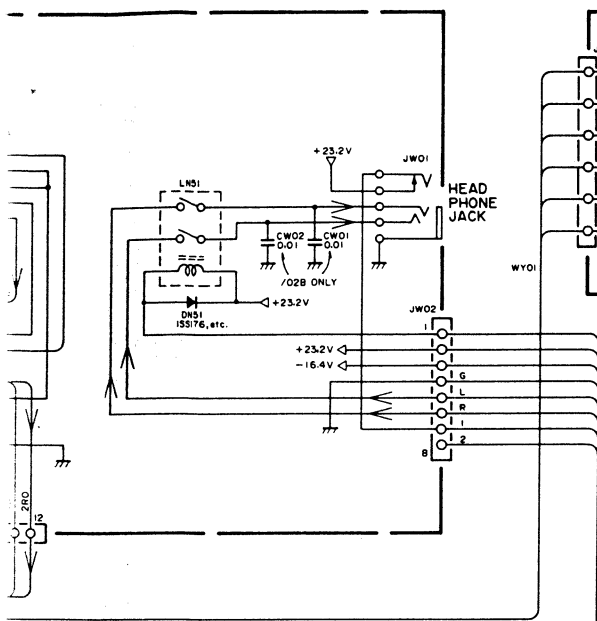


2. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern side)



# PM-30

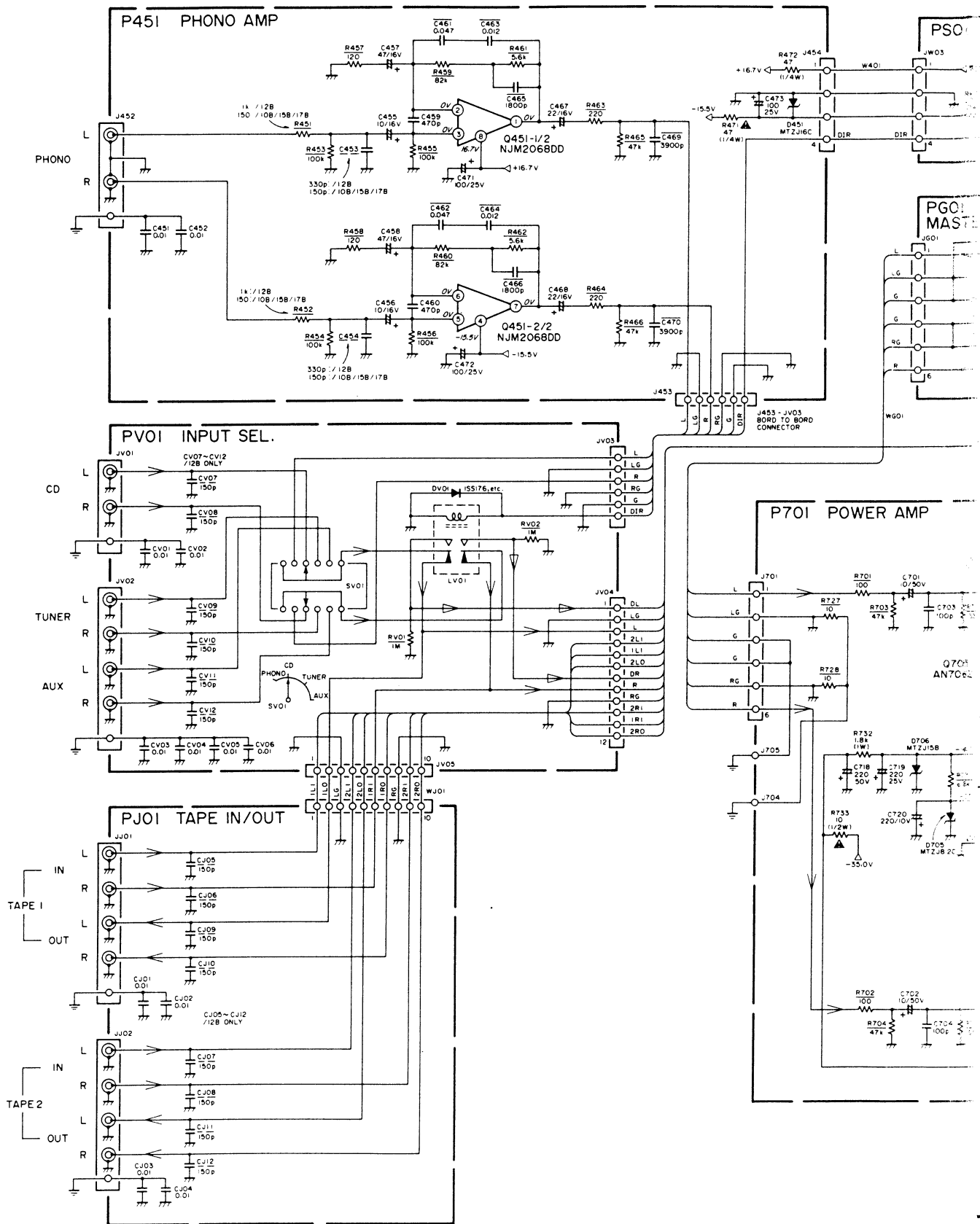


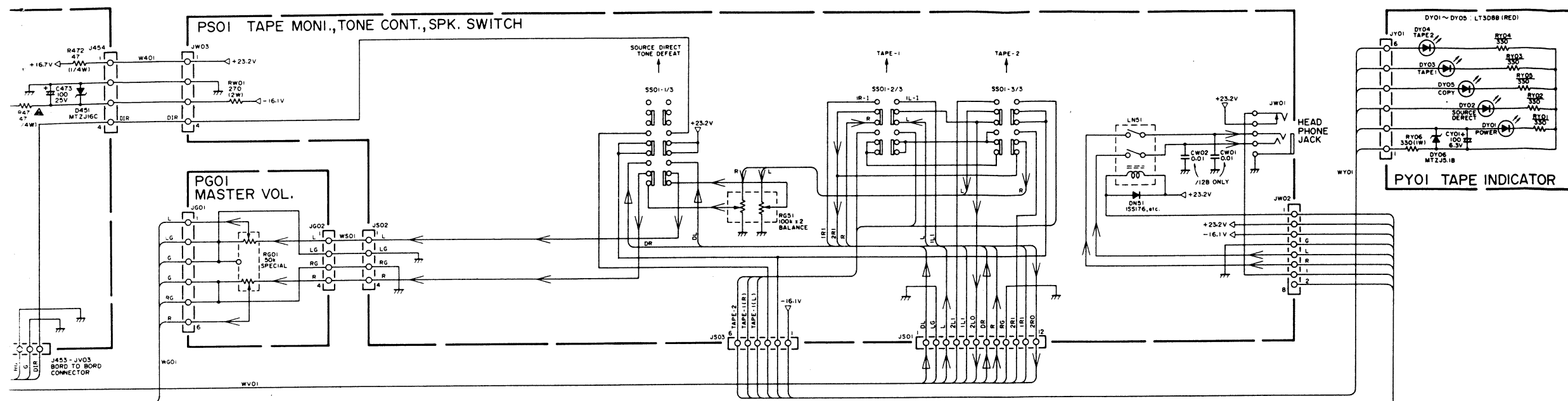


NOTE :  
 —————> NORMAL SIGNAL LINE  
 —————> SOURCE DIRECT SIGNAL LINE

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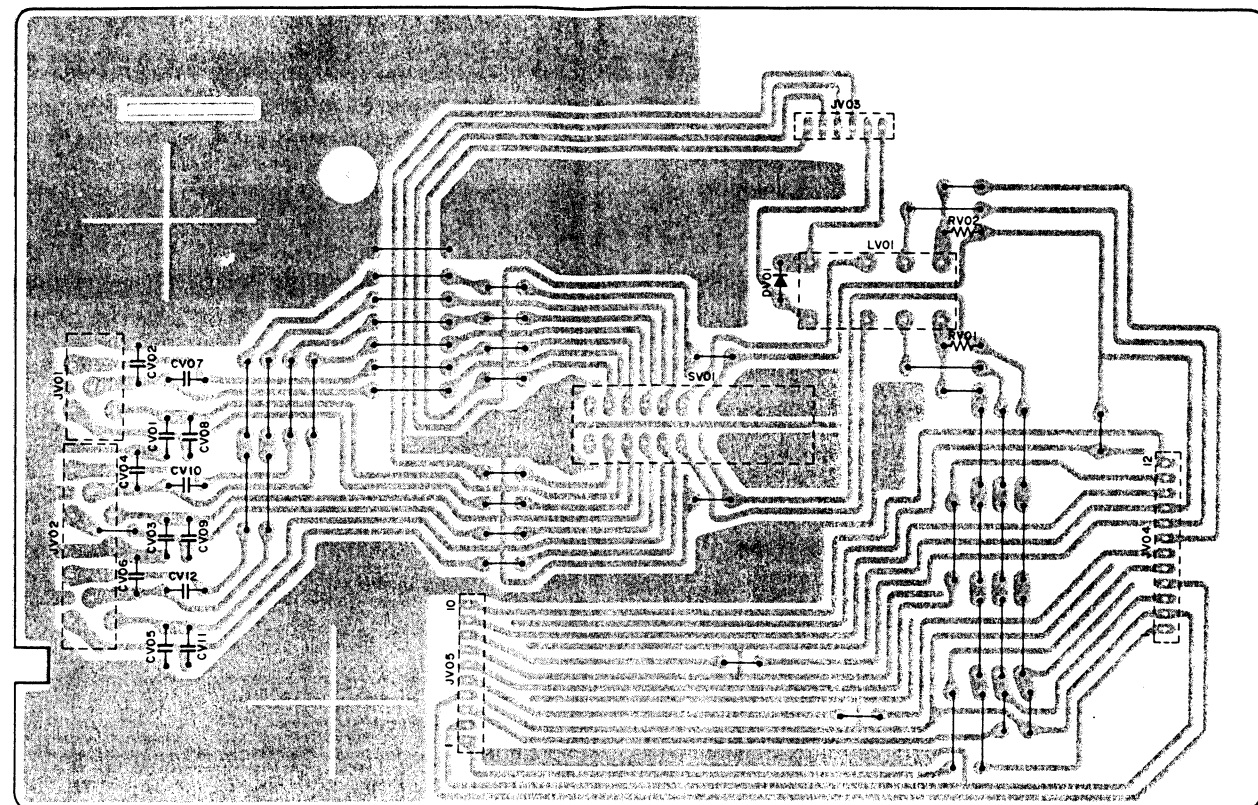
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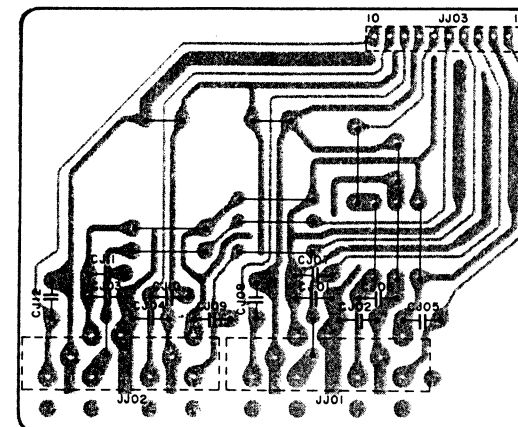




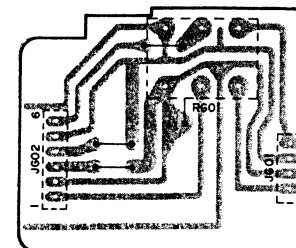
PV01



PJ01



PG01



PY01



## MZ 2617



| REF. DESIG. | PART NO.       | DESCRIPTION                                    |
|-------------|----------------|--|
| 001B        | 4822 425 40176 | Front Panel Assembly /01B/02B/05B/07B          |
|             | 4822 425 40179 | Front Panel Assembly /10B/12B/15B/17B          |
| 003B        | 4822 459 10943 | Badge  |
| 010B        | 4822 413 41544 | Knob, Volume                                   |
| 011B        | 4822 413 41545 | Knob, Selector                                 |
| 012B        | 4822 413 41589 | Knob, Tone/Balance                             |
|             | 4822 413 31551 | Knob, Tone/Balance /10B/12B/15B/17B            |
| 013B        | 4822 410 60395 | Button, Power                                  |
| 014B        | 4822 410 60343 | Button, Speaker                                |
| 002D        | 4822 501 11008 | Screw  |
| 001F        | 4822 466 92914 | Sheet, DENKA                                   |
| 005G        | 4822 462 41477 | Leg  |
| 010G        | 4822 404 60628 | Link, Power Switch                             |
| 902G        | 4822 532 60948 | Bushing, AC Cord /02B/07B/01B/10B/12B/17B      |
|             | 4822 532 61184 | Bushing, AC Cord /05B/15B                      |
| 001P        | 4822 401 11351 | Clamper, Phono Jack                            |
| ▲ F001      | 4822 070 31002 | Fuse, 1A 250V /01B                             |
| ▲ F002      | 4822 253 30206 | Fuse, 2A 250V /01B                             |
| ▲ J001      | 4822 256 30233 | Jack, Fuse Holder /01B                         |
| J031        | 4822 290 40297 | Terminal, GND                                  |
| ▲ J091      | 4822 272 10227 | Voltage Selector /01B                          |
| ▲ J092      | 4822 265 10092 | Jack, AC Adapter /01B                          |
| ▲ L001      | 4822 146 21554 | Power Transformer /02B/05B/07B/10B/12B/15B/17B |
|             | 4822 146 21567 | Power Transformer /01B                         |
| S011        | 4822 273 10214 | Rotary Switch, Selector                        |
| 001T        | 4822 736 20695 | User Manual /01B/02B/05B/07B                   |
|             | 4822 736 20715 | User Manual /10B/12B/15B/17B                   |

#### 4. IDLING CURRENT ADJUSTMENT

- Before switching the power ON, set the Master Volume control to the minimum position and the Balance and Tone controls to the center positions. Also set semi-fixed resistors R755 (L CH) and R756 (R CH) on PCB P701 to the center positions.
- Each of the cement resistors R767 (L CH) and R768 (R CH) on the PCB P701 is provided with three test points. Connect a digital voltmeter, set for the DC voltage input, to the test points at the two extremities of the three test points of R767 or R768.
- After the setup above, switch the power ON and adjust semi-fixed resistor R755 (L CH) or R756 (R CH) on PCB P701 according to the digital voltmeter reading. The target setting value is 15 mV (41.6 mA) for both the L CH and R CH.

Please refer to the table below.

| Elapsed time after power ON | Idling current setting value |
|-----------------------------|------------------------------|
| 30 sec. - 1 min.            | 15 mV                        |
| 1 min. - 2 min.             | 16 mV                        |
| 2 min. - 4 min.             | 16.6 mV                      |
| More than 4 min.            | 15 mV                        |

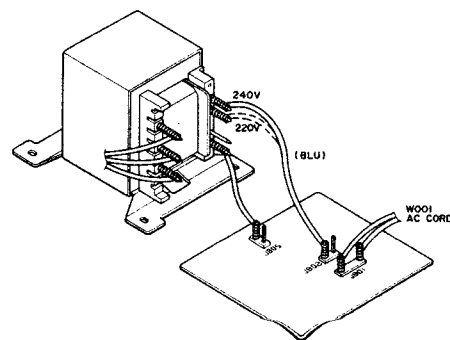
#### Note on Safety:

Symbol ▲ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ▲. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

#### 5. HOW TO CHANGE THE SUPPLY VOLTAGE (/02B/05B/07B/10B/12B/15B/17B Versions)

With the /05B/07B/15B/17B Versions, the rated supply voltage of 240V can be changed to 220V. In the same way, the 220V rated supply voltage of the /02B/10B/12B Versions can be changed to 240V.

Refer to the following diagram for the voltage change procedure.



#### 6. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing

| Item                     | Use   |
|--------------------------|---|
| Distortion Analyzer      | Distortion measurements                                 |
| Audio Oscillator         | Sinewave and squarewave signal source                   |
| ACVTVM                   | Voltage measurements (AC)                               |
| Oscilloscope             | Waveform analysis and trouble shooting and ASO aignment |
| Circuit Tester           | Trouble shooting  |
| DCVTVM                   | Voltage measurements (DC)                               |
| AC Wattmeter             | Monitors primary power to amplifier                     |
| Line Voltmeter           | Monitors potential of primary power to amplifier        |
| Variable Autotransformer | Adjust level of primery power to amplifier              |
| Shorting Plug            | Shorts amplifier input to eliminate noise pickup        |

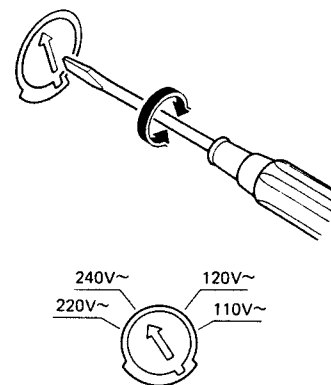
#### 7. VOLTAGE CONVERSION

##### ● EUROPEAN MODEL ONLY

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

##### VOLTAGE SELECTOR

**CAUTION**  
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.



8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.  
RESISTOR  
R\*\*\*: (1) GD05 --- 140, Carbon film fixed resistor, ±5%, 1/4W  
R\*\*\*: (2) GD05 --- 160, Carbon film fixed resistor, ±5%, 1/6W  
① --- Resistance value

Examples  
① Resistance value  
0.1Ω...001 10Ω...100 1kΩ...102 100kΩ...104  
0.5Ω...005 18Ω...180 2.7kΩ...272 680kΩ...684  
1Ω...010 100Ω...101 10kΩ...103 1MΩ...105  
6.8Ω...068 390Ω...391 22kΩ...223 4.7MΩ...475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C\*\*\*: CERAMIC CAP.  
(1) DD1 --- 370, Ceramic condenser  
Disc type  
Temp. coeff. P350 ~ N1000, 50V  
①  
Capacity value  
Tolerance

Examples  
① Tolerance (Capacity deviation)  
±0.25F...0  
±0.5pF...1  
±5%...5  
\* Tolerance of COMMON PARTS handled here are as follows:  
0.5pF ~ 5pF, ±0.25pF  
6pF ~ 10pF, ±0.5pF  
12pF ~ 560pF, ±5%  
② Capacity value  
0.5pF...005 3pF...030 100pF...101  
1pF...010 10pF...100 220pF...221  
1.5pF...015 47pF...470 560pF...561

C\*\*\*: CERAMIC CAP.  
(1) DK16 --- 300, High dielectric constant ceramic condenser  
Disc type  
Temp. chara. 2B4, 50V  
①  
Capacity value

Example  
② Capacity value  
100pF...101 1000pF...102 10000pF...103  
470pF...471 2200pF...222

C\*\*\*: ELECTROLY CAP. ( ⚡ ), FILM CAP. ( ⚡ )  
(1) EA --- 10, Electrolytic condenser  
One-way lead type, Tolerance ±20%  
① ②  
Dielectric strength  
Capacity value

Examples  
① Capacity value  
0.1μF...104 4.7μF...475 100μF...107  
0.33μF...334 10μF...106 330μF...337  
1μF...105 22μF...226 1100μF...108  
2200μF...228  
② Working voltage  
6.3V...006 25V...025  
10V...010 35V...035  
16V...016 50V...050

(2) DF15 --- 350, Plastic film condenser  
One-way type, Mylar ±5% 50V  
①  
Capacity value

Examples  
① Capacity value  
0.001μF (1000pF)...102 0.1μF...104  
0.0018μF...182 0.56μF...564  
0.01μF...103 1μF...105  
0.015μF...153

| REF. DESIG.  | PART NO.                         | DESCRIPTION                                   |
|--------------|----------------------------------|---|
|              |                                  | PG01-MASTER VOLUME<br>CIRCUIT BOARD           |
| RG01         | 4822 101 30653                   | Variable Resistor 50KΩ                        |
|              |                                  | PJ01-TAPE IN/OUT<br>CIRCUIT BOARD             |
| CJ01<br>CJ04 | 4822 122 32486                   | Ceramic Cap. 0.01μF +80% -20%                 |
| JJ01<br>JJ02 | 4822 266 30284                   | Terminal, 4P RCA<br>Terminal, 4P RCA          |
|              |                                  | PS01-TAPE/TONE/SPK.<br>CIRCUIT BOARD          |
| CE09         | 4822 124 90352                   | Elect Cap. 10μF 16V<br>/01B/02B/05B/07B       |
| CE10         | 4822 124 90352                   | Elect Cap. 10μF 16V<br>/01B/02B/05B/07B       |
| CW01         | 4822 122 32486                   | Ceramic 0.01μF +80% -20%<br>/02B/12B          |
| CW02         | 4822 122 32486                   | Ceramic 0.01μF +80% -20%<br>/02B/12B          |
| RE13         | 4822 100 30139                   | Variable Resistor 50KΩ(C)<br>/01B/02B/05B/07B |
| RE14         | 4822 100 30139                   | Variable Resistor 50KΩ(C)<br>/01B/02B/05B/07B |
| RG51         | 4822 100 30138                   | Variable Resistor 100KΩ(MN)                   |
| RW01         | 4822 116 60455                   | Metal Resistor 270Ω ±5% 2W                    |
| DN51         | 4822 130 33305                   | Diode 1SS176, etc.                            |
| JW01         | 4822 267 31227                   | Jack, Headphone<br>/01B/02B/05B/07B           |
|              | 4822 267 31229                   | Jack /10B/12B/15B/17B                         |
| LN51         | 4822 280 20196                   | Relay   |
| SS01         | 4822 276 12956                   | Push Switch                                   |
|              |                                  | PV01-INPUT SELECTOR<br>CIRCUIT BOARD          |
| CV01<br>CV06 | 4822 122 32486                   | Ceramic Cap. 0.01μF +80% -20%                 |
| DV01         | 4822 130 33305                   | Diode 1SS176, etc.                            |
| JV01<br>JV02 | 4822 266 30282<br>4822 266 30284 | Terminal, 2P RCA<br>Terminal, 4P RCA          |
| LV01         | 4822 280 20195                   | Relay, SZ-2104                                |
| SV01         | 4822 277 21412                   | Slide Switch, Selector                        |

| REF. DESIG.  | PART NO.   | DESCRIPTION  |
|--|--|--|
|  |  | PY01-TAPE INDICATOR<br>CIRCUIT BOARD   |
| CY01   | 4822 124 21737   | Elect Cap. 100μF 6.3V  |
| RY06   | 4822 111 50474   | Resistor 330Ω ±5%  |
| DY01<br>DY05<br>DY06                                 | 4822 130 80326<br>4822 130 80317   | L.E.D. LT3D8B (RED)<br>Zener Diode RD5.1JB2/MTZJ5.1B   |
|  |  | P451-PHONO AMP.<br>CIRCUIT BOARD   |
| C451<br>C452<br>C453                                 | 4822 122 32486<br>4822 122 32486<br>4822 126 11069   | P451-CAPACITORS<br>Ceramic 0.01μF +80% -20%<br>Ceramic 0.01μF +80% -20%<br>Ceramic 150pF ±10%<br>/01B/05B/07B  |
|  | 4822 121 51037   | Film 150pF ±5%<br>/10B/12B/15B/17B   |
| C454   | 4822 126 11069   | Ceramic 150pF ±10%<br>/01B/05B/07B   |
|  | 4822 121 51037   | Film 150pF ±5%<br>/10B/12B/15B/17B   |
| C455<br>C456<br>C457<br>C458<br>C459<br>C460<br>C461 | 4822 124 90352<br>4822 124 90352<br>4822 124 41539<br>4822 124 41539<br>4822 126 11127<br>4822 126 11127<br>4822 121 42764 | Elect 10μF 16V<br>Elect 10μF 16V<br>Elect 47μF 16V<br>Elect 47μF 16V<br>Ceramic 470pF ±10% /02B<br>Ceramic 470pF ±10% /02B<br>Film 0.047μF<br>/10B/12B/15B/17B |
| C462   | 4822 121 42764   | Film 0.047μF ±5%<br>/10B/12B/15B/17B   |
| C463   | 4822 121 42755   | Film 0.012μF ±5%<br>/10B/12B/15B/17B   |
| C464   | 4822 121 42755   | Film 0.012μF ±5%<br>/10B/12B/15B/17B   |
| C465   | 4822 121 42758   | Film 1800pF ±5%<br>/10B/12B/15B/17B  |
| C466   | 4822 121 42758   | Film 1800pF ±5%<br>/10B/12B/15B/17B  |
| C467<br>C468   | 4822 124 90358<br>4822 124 90358   | Elect 22μF 16V<br>Elect 22μF 16V   |
| C469   | 4822 121 42763   | Film 3900pF ±5%<br>/10B/12B/15B/17B  |
| C470   | 4822 121 42763   | Film 3900pF ±5%<br>/10B/12B/15B/17B  |
| C471   | 4822 124 41535   | Elect 100μF 25V<br>/01B/02B/05B/07B  |
|  | 4822 124 90365   | Elect 220μF 25V<br>/10B/12B/15B/17B  |
| C472   | 4822 124 41535   | Elect 100μF 25V<br>/01B/02B/05B/07B  |
|  | 4822 124 90365   | Elect 220μF 25V<br>/10B/12B/15B/17B  |
| C473   | 4822 124 41535   | Elect 100μF 25V<br>/01B/02B/05B/07B  |
|  | 4822 124 90365   | Elect 220μF 25V<br>/10B/12B/15B/17B  |

| REF. DESIG.  | PART NO.   | DESCRIPTION  |
|--|--|--|
|  |  | P451-RESISTORS   |
| ▲ R471<br>R472                                       | 4822 111 90731<br>4822 111 30006   | 47Ω ±2% ¼W, Fuse<br>47Ω ±5% ¼W   |
|  |  | P451-SEMICONDUCTORS  |
| D451   | 4822 130 80498   | Zener RD16JB2/MTZJ16C  |
| Q451   | 4822 209 73064   | IC NJM2068DD   |
|  |  | P451-MISCELLANEOUS   |
| J452   | 4822 265 20355   | Terminal, 2P RCA   |
|  |  | P701-POWER AMP.<br>CIRCUIT BOARD   |
|  |  | P701-CAPACITORS  |
| CN01<br>CN02<br>CN04<br>CN05                         | 4822 124 22274<br>4822 124 41543<br>4822 124 22275<br>4822 124 23417   | Elect 4.7μF 50V<br>Elect 1μF 50V<br>Elect 47μF 10V<br>Elect 33μF 10V   |
| CW51   | 4822 122 32486   | Ceramic 0.01μF +80% -20%<br>/02B/12B   |
| CW52   | 4822 122 32486   | Ceramic 0.01μF +80% -20%<br>/02B/12B   |
| C701<br>C702<br>C703<br>C704<br>C705<br>C706<br>C707 | 4822 124 22571<br>4822 124 22571<br>4822 121 51517<br>4822 121 51517<br>4822 124 90354<br>4822 124 90354<br>4822 121 51037 | Elect 10μF 50V<br>Elect 10μF 50V<br>Film 100pF ±5%<br>Film 100pF ±5%<br>Elect 100μF 16V<br>Elect 100μF 16V<br>Film 150pF ±5%<br>/01B/02B/05B/07B |
|  | 4822 121 51037   | Film 150pF ±5%<br>/10B/15B/17B   |
|  | 4822 126 11069   | Ceramic 150pF /12B   |
| C708   | 4822 121 51037   | Film 150pF ±5%<br>/01B/02B/05B/07B   |
|  | 4822 121 51037   | Film 150pF ±5%<br>/10B/15B/17B   |
| C709   | 4822 126 11069<br>4822 126 11068   | Ceramic 150pF /12B<br>Ceramic 39pF ±5%<br>/01B/02B/05B/07B   |
|  | 4822 121 43135   | Film 39pF ±5%<br>/10B/15B/17B  |
| C710   | 4822 126 10364   | Ceramic 100pF /12B<br>Ceramic 39pF ±5%<br>/01B/02B/05B/07B   |
|  | 4822 121 43135   | Film 39pF ±5%<br>/10B/15B/17B  |
| C711   | 4822 126 10364<br>4822 126 11126   | Ceramic 100pF /12B<br>Ceramic 5.6pF ±10%<br>/01B/02B/05B/07B   |
|  | 4822 121 43128   | Film 10pF ±10%<br>/10B/12B/15B/17B   |
| C712   | 4822 126 11126   | Ceramic 5.6pF ±10%<br>/01B/02B/05B/07B   |
|  | 4822 121 43128   | Film 10pF ±10%<br>/10B/12B/15B/17B   |
| C713   | 4822 126 11125   | Ceramic 10pF ±5%<br>/01B/02B/05B/07B   |
|  | 4822 121 43128   | Film 10pF ±10%<br>/10B/12B/15B/17B   |

| REF. DESIG.           | PART NO.       | DESCRIPTION  |
|-----------------------|----------------|--|
| C714                  | 4822 126 11125 | Ceramic 10pF $\pm 5\%$<br>/01B/02B/05B/07B               |
|                       | 4822 121 43128 | Film 10pF $\pm 10\%$<br>/10B/12B/15B/17B                 |
| C715                  | 4822 124 90362 | Elect 22 $\mu$ F 50V<br>/01B/02B/05B/07B                 |
| C716                  | 4822 124 90362 | Elect 22 $\mu$ F 50V<br>/01B/02B/05B/07B                 |
| C717                  | 4822 124 90366 | Elect 220 $\mu$ F 50V                                    |
| C718                  | 4822 124 90366 | Elect 220 $\mu$ F 50V                                    |
| C719                  | 4822 124 41535 | Elect 100 $\mu$ F 25V<br>/01B/02B/05B/07B                |
|                       | 4822 124 90365 | Elect 220 $\mu$ F 25V<br>/10B/12B/15B/17B                |
| C720                  | 4822 124 41535 | Elect 100 $\mu$ F 25V<br>/01B/02B/05B/07B                |
|                       | 4822 124 90365 | Elect 220 $\mu$ F 25V<br>/10B/12B/15B/17B                |
| C751                  | 4822 124 90354 | Elect 100 $\mu$ F 16V                                    |
| C752                  | 4822 124 90354 | Elect 100 $\mu$ F 16V                                    |
| C753<br>C756          | 4822 121 43126 | Film 120pF $\pm 5\%$                                     |
| ▲ C801                | 4822 124 23458 | Elect 4700 $\mu$ F 42V<br>/01B/02B/05B/07B               |
|                       | 4822 124 42044 | Elect 6800 $\mu$ F 45V<br>/10B/12B/15B/17B               |
| ▲ C802                | 4822 124 23458 | Elect 4700 $\mu$ F 42V<br>/01B/02B/05B/07B               |
|                       | 4822 124 42044 | Elect 6800 $\mu$ F 45V<br>/10B/12B/15B/17B               |
| C803                  | 4822 124 22273 | Elect 0.47 $\mu$ F 50V                                   |
| C804                  | 4822 122 32486 | Ceramic 0.01 $\mu$ F +80% -20%                           |
| C805                  | 4822 124 41535 | Elect 100 $\mu$ F 25V                                    |
| C806                  | 4822 124 41536 | Elect 100 $\mu$ F 35V                                    |
| C807                  | 4822 124 90355 | Elect 100 $\mu$ F 50V                                    |
| C808                  | 4822 124 90355 | Elect 100 $\mu$ F 50V                                    |
| C809                  | 4822 122 32486 | Ceramic 0.01 $\mu$ F +80% -20%                           |
| <b>P701-RESISTORS</b> |                |  |
| RN01                  | 4822 111 91257 | 1K $\Omega$ $\pm 5\%$ 1/6W                               |
| RN02                  | 4822 111 91257 | 1K $\Omega$ $\pm 5\%$ 1/6W                               |
| RN51                  | 4822 116 60455 | 270 $\Omega$ $\pm 5\%$ 2W, Metal                         |
| RN52                  | 4822 116 60455 | 270 $\Omega$ $\pm 5\%$ 2W, Metal                         |
| ▲ R707                | 4822 116 82608 | 680 $\Omega$ $\pm 2\%$ $\frac{1}{4}$ W, Fuse<br>/02B/05B |
|                       | 4822 116 81748 | 330 $\Omega$ $\pm 2\%$ $\frac{1}{4}$ W, Fuse<br>/12B/15B |
| ▲ R708                | 4822 116 82608 | 680 $\Omega$ $\pm 2\%$ $\frac{1}{4}$ W, Fuse<br>/02B/05B |
|                       | 4822 116 81748 | 330 $\Omega$ $\pm 2\%$ $\frac{1}{4}$ W, Fuse<br>/12B/15B |
| R713                  | 4822 273 10214 | 33K $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W                   |
| R714                  | 4822 273 10214 | 33K $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W                   |

| REF. DESIG.                | PART NO.       | DESCRIPTION                                     |
|----------------------------|----------------|---|
| R732                       | 4822 116 60343 | 1.8K $\Omega$ $\pm 5\%$ 1W                      |
| ▲ R733                     | 4822 116 60313 | 10 $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W, Fusible  |
| ▲ R734                     | 4822 116 60313 | 10 $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W, Fusible  |
| R755                       | 4822 100 11373 | 4.7K $\Omega$ , Trimming                        |
| R756                       | 4822 100 11373 | 4.7K $\Omega$ , Trimming                        |
| R757                       | 4822 111 91285 | 100 $\Omega$ $\pm 5\%$ 1/6W                     |
| R758                       | 4822 111 91285 | 100 $\Omega$ $\pm 5\%$ 1/6W                     |
| R759                       | 4822 111 91285 | 100 $\Omega$ $\pm 5\%$ 1/6W                     |
| R760                       | 4822 111 91285 | 100 $\Omega$ $\pm 5\%$ 1/6W                     |
| R763                       | 4822 116 60267 | 470 $\Omega$ $\pm 5\%$ 1/6W                     |
| R764                       | 4822 116 60267 | 470 $\Omega$ $\pm 5\%$ 1/6W                     |
| ▲ R765                     | 4822 111 91424 | 2.2 $\Omega$ $\pm 5\%$ 1/6W                     |
| ▲ R766                     | 4822 111 91424 | 2.2 $\Omega$ $\pm 5\%$ 1/6W                     |
| R767                       | 4822 116 82049 | 0.18 $\Omega \times 2$ $\pm 10\%$ 3W            |
| R768                       | 4822 116 82049 | 0.18 $\Omega \times 2$ $\pm 10\%$ 3W            |
| R769                       | 4822 116 52849 | 220 $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W          |
| R770                       | 4822 116 52849 | 220 $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W          |
| R771                       | 4822 111 90726 | 10 $\Omega$ $\pm 5\%$ 2W                        |
| R772                       | 4822 111 90726 | 10 $\Omega$ $\pm 5\%$ 2W                        |
| ▲ R773                     | 4822 111 91424 | 2.2 $\Omega$ $\pm 5\%$ 1/6W                     |
| ▲ R774                     | 4822 111 91424 | 2.2 $\Omega$ $\pm 5\%$ 1/6W                     |
| ▲ R801                     | 4822 116 60306 | 1 $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W, Fusible   |
| ▲ R802                     | 4822 111 90731 | 47 $\Omega$ $\pm 2\%$ $\frac{1}{4}$ W, Fuse     |
| ▲ R803                     | 4822 111 60308 | 2.2 $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W, Fusible |
| ▲ R804                     | 4822 111 90731 | 47 $\Omega$ $\pm 2\%$ $\frac{1}{4}$ W, Fuse     |
| R805                       | 4822 111 91423 | 1.2K $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W         |
| R806                       | 4822 111 91423 | 1.2K $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W         |
| ▲ R807                     | 4822 113 90119 | 22 $\Omega$ $\pm 2\%$ $\frac{1}{4}$ W, Fuse     |
| <b>P701-SEMICONDUCTORS</b> |                |   |
| DN01                       | 4822 130 80837 | Diode HSS81                                     |
| DN02                       | 4822 130 80837 | Diode HSS81                                     |
| DN03                       | 4822 130 33305 | Diode 1SS176, etc.                              |
| D701                       | 4822 130 33305 | Diode 1SS176, etc.                              |
| D704                       |                |   |
| D705                       | 4822 130 80273 | Zener RD8.2J82/MTZJ8.2C                         |
| D706                       | 4822 130 80322 | Zener RD15J81/MTZJ15B                           |
| ▲ D801                     | 4822 130 31007 | Diode S4V8-20                                   |
| D802                       | 4822 130 33305 | Diode 1SS176, etc.                              |
| D803                       | 4822 130 33305 | Diode 1SS176, etc.                              |
| D804                       | 4822 130 80116 | Zener RD24J82/MTZJ24D                           |
| D805                       | 4822 130 80498 | Zener RD16J82/MTZJ16C                           |
| ▲ D806                     | 4822 130 80839 | Diode S5688G                                    |
| QN01                       | 4822 130 43233 | Transistor 2SC2240(GR, BL)                      |
| QN02                       | 4822 130 43233 | Transistor 2SC2240(GR, BL)                      |
| QN03                       | 4822 130 42951 | Transistor 2SA970(GR, BL)                       |
| QN04                       | 4822 290 83312 | IC TA7317P                                      |
| Q701                       | 4822 130 42951 | Transistor 2SA970(GR, BL)                       |
| Q702                       | 4822 130 42951 | Transistor 2SA970(GR, BL)                       |
| Q703                       | 4822 130 43233 | Transistor 2SC2240(GR, BL)                      |
| Q704                       | 4822 130 43233 | Transistor 2SC2240(GR, BL)                      |
| Q705                       | 4822 209 83732 | IC AN7062P                                      |
| Q751                       | 4822 130 60526 | Transistor 2SD1508                              |
| Q752                       | 4822 130 60526 | Transistor 2SD1508                              |
| Q757                       | 4822 130 60696 | Transistor 2SC1627(O, Y)                        |
| Q758                       | 4822 130 60696 | Transistor 2SC1627(O, Y)                        |
| Q759                       | 4822 130 69693 | Transistor 2SA817(O, Y)                         |

| REF. DESIG.                                | PART NO.       | DESCRIPTION   |
|--|----------------|---|
| Q760                                       | 4822 130 60693 | Transistor 2SA817(O, Y)                                       |
| ▲ Q761                                     | 4822 130 60697 | Transistor 2SC3180N(R, O)<br>/01B/02B/05B/07B                 |
| ▲ Q761                                     | 4822 130 43305 | Transistor 2SC3181(R, O)<br>/10B/12B/15B/17B                  |
| ▲ Q762                                     | 4822 130 60697 | Transistor 2SC3180N(R, O)<br>/01B/02B/05B/07B                 |
| ▲ Q762                                     | 4822 130 43305 | Transistor 2SC3181(R, O)<br>/10B/12B/15B/17B                  |
| ▲ Q763                                     | 4822 130 60694 | Transistor 2SA1263N(R, O)<br>/01B/02B/05B/07B                 |
| ▲ Q763                                     | 4822 130 43018 | Transistor 2SA1264(R, O)<br>/10B/12B/15B/17B                  |
| ▲ Q764                                     | 4822 130 60694 | Transistor 2SA1263N(R, O)<br>/01B/02B/05B/07B                 |
| ▲ Q764                                     | 4822 130 43018 | Transistor 2SA1264(R, O)<br>/10B/12B/15B/17B                  |
| Q801                                       | 4822 130 61179 | Transistor 2SD2037(E, F)                                      |
| Q802                                       | 4822 130 61176 | Transistor 2SB1357(E, F)                                      |
| <b>P701-MISCELLANEOUS</b>                  |                |   |
| JW51                                       | 4822 290 81363 | Terminal, Speaker /01B/05B/07B                                |
|  | 4822 290 81373 | Terminal, Speaker /02B  |
|  | 4822 290 60837 | Terminal, Speaker /10B/15B/17B                                |
| JW52                                       | 4822 290 60841 | Terminal, Speaker /12B  |
|  | 4822 290 81364 | Terminal, Speaker /01B/05B/07B                                |
|  | 4822 290 81373 | Terminal, Speaker /02B  |
|  | 4822 290 60836 | Terminal, Speaker /10B/15B/17B                                |
|  | 4822 290 60839 | Terminal, Speaker /12B  |
| LN01                                       | 4822 280 20197 | Relay, DH2SU  |
| L751                                       | 4822 157 51739 | Coil, Speaker   |
| L752                                       | 4822 157 51739 | Coil, Speaker   |
| <b>P901-POWER SWITCH<br/>CIRCUIT BOARD</b> |                |   |
| ▲ F902                                     | 4822 070 31002 | Fuse 1A 250V<br>/02B/05B/07B/10B/12B/15B/17B                  |
| ▲ G901                                     | 4822 121 43732 | Film Cap. 0.01 $\mu$ F $\pm 20\%$<br>/01B/02B/07B/10B/12B/17B |
| ▲ G902                                     | 4822 122 33276 | Ceramic Cap. 0.01 $\mu$ F $\pm 20\%$<br>/05B/15B              |
| ▲ J903                                     | 4822 264 30313 | Jack, AC Outlet /01B  |
| ▲ S901                                     | 4822 276 11654 | Push Switch, Power  |

**NOTE ON SAFETY:**  
Symbol ▲ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ▲. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.